

AMENDMENTS TO THE SPECIFICATION:

Please delete the first full paragraph on page 2 of Applicant's specification and substitute therefor the following new paragraph:

On the other hand, as the removal technique for the particle shape substance a technique in which as the above stated oxidation decomposition using NOx the noble metal such as platinum is low temperature decomposed has established but this is high cost the ~~regular~~regular spread has not attained. Now, a method for processing, in which using a ceramic filter the fine particles are adsorbed and after the adsorption this is processed in the combustion, has established. However, a batch processing and an alternative ~~pre-essing~~processing system in a plural processing system has established but since this invites the high cost and the badness in use manner, the regular spread is obstructed.

Please delete the second full paragraph on page 2 of Applicant's specification and substitute therefor the following new paragraph:

In the diesel engine, according to the operation conditions, the components in the harmful ~~sub-stances~~substances in the exhaust gas changed largely, the method in which all the present processing apparatuses is followed and processed and an apparatus in which the processing function lowering is regenerated in a real time are not realized.

Please delete the fifth paragraph on page 3 of Applicant's specification and substitute therefor the following new paragraph:

(1) As a solving measure for the technique wherein, ~~without~~without the affect of sulfur, in a pre-process using the cyclone and the electric dust collection, the particle shape substance is separated and removed, using the discharge NO_x in an exhaust gas is decomposed completely, and as to the particle shape substance which has not separated in the pre-process, and a necessary NO₂ for oxidizing the fine particles under a low temperature of about 300 C is generated in a real time.

Please delete the first full paragraph on page 4 of Applicant's specification and substitute therefor the following new paragraph:

As a concrete example, to lower the voltage applied to the electrode as possible, one of the electrodes is formed by the anode oxidation with a long line shape, a belt shape, a rod shape, or a plate shape, and an outer skin of a superior permeability performance and thin ~~insulation~~insulation body such as a ceramic, and a heat resistance silicone etc. is covered.

Please delete the second full paragraph on page 4 of Applicant's specification and substitute therefor the following new paragraph:

Another of the electrodes is formed with a ~~bear~~bare wire suited to a shape of the insulation core wire and along to the insulation core wire is arranged closely in a parallel shape, a ~~rectangular~~rectangular shape, a spiral shape, a net shape, or a zigzag shape by performing the anode oxidation film and the ceramics coating to obtain the anti-environment performance and then the ozone and the barrier discharge is generated effectively.

Please delete the first paragraph on page 6 of Applicant's specification and substitute therefor the following new paragraph:

(2) As a solving measure of the technique wherein the generated NO₂ in the above stated item (1) and the ozone generated in an oxygen atmosphere and an active oxygen are used as an ~~exi-dation~~oxidation agent, the particle shape substance is decomposed completely using a low cost catalyst under a low temperature about 300 C, since the amount of NO₂ and the ozone (more than 400 C, this has became the active oxygen) is controlled freely with the ~~volt-age~~voltage, the frequency number and the oxides of vanadium and molybdenum, the zeolite and the alumina are used as the catalyst and under the low temperature about 300 C, without of the bare use of the noble metal the particle shape substance is

decomposed completely.

Please delete the third full paragraph on page 7 of Applicant's specification and substitute therefor the following new paragraph:

Firstly, as the discharge element, this element has been a simple structure in which around the thin and long discharge core wire the discharge wire is arranged with the spiral shape, for example. With the technique for manufacturing the optical fiber and the electric wire, the large amount of ~~discharge~~ discharge elements are manufactured simple and the discharge element having the superior reliability is manufactured.

Please delete the second paragraph on page 8 of Applicant's specification and substitute therefor the following new paragraph:

Fig. 1A is a cross-sectional explanatory view showing an exhaust gas processing apparatus in which in a pre-process the particle shape substance are caught and processed by the cyclone and the electric dust collection according to the present invention and in a ~~pre-st-process~~ post-process NOx is decomposed using the high voltage discharge it enable to follow the dynamic change in the engine etc..

Please delete the second paragraph on page 10 of Applicant's specification and substitute therefor the following new paragraph:

The features of the present invention are classified largely to two processing units, in a pre-process in a cyclone 6 the particle shape substance is caught and processed, in a post-process in NOx decomposition unit 8 9 according to a barrier discharge NOx is decomposed and NO₂ necessary to decompose the amount of the residual particle shape ~~substance~~ substance in which NO in the exhaust gas have not processed in the pre-process is generated and NO₂ is made to form CO₂ using the catalyst etc..

Please delete the paragraph bridging pages 10 and 11 of Applicant's specification and substitute therefor the following new paragraph:

In the exhaust gas processing unit, the exhaust gas from an engine is processed in a bypass flow passage, which is separated from an exhaust gas main flow. Namely, the exhaust gas from the engine flows into through an exhaust pipe 2 and in an interference chamber 1 the exhaust gas is caught in a coupling pipe 3, which is connected with a fluid state, and the exhaust gas is led into the cyclone 6 through a pipe 5. As a motive force therefor a blower 9 is provided. Most of the exhaust gas which is led into the cyclone is swirled as shown in an arrow mark a and then the particle shape substance are caught in a bottom portion 7 of the cyclone 6.

At an upper portion of a separation chamber of the cyclone the particle shape substance is removed and a bypass flow of the exhaust gas in which NO_x is standardized is led into NO_x decomposition unit 8, in a barrier discharge ~~e-electrode~~ electrode portion 10 the decomposition and NO₂ generation are carried out. A reference numeral 4 denotes an exhaust gas pipe, which is connected to a muffler etc. A high voltage power supply portion and a control portion are omitted.

Please delete the first full paragraph on page 12 of Applicant's specification and substitute therefor the following new paragraph:

The caught particle shape substance may be processed using the catalyst and the heater. As to the catalyst, without the use of the ~~noble~~ noble metals etc., ge-site of iron oxide and zeolite having the comparative low cost can be used, and using calcium compound the particle shape substance is burned and processed using the heater. Further the heater and the catalyst can be used together.

Please delete the second full paragraph on page 12 of Applicant's specification and substitute therefor the following new paragraph:

Since the particle shape substance is stored in the bottom portion of a vessel by the force of cyclone, the bottom portion of the vessel may be made by the high heat insulation performance material such as ceramics and further by utilizing

effectively the ~~he at~~ heat generated during the burning time the processing of the particle shape substance can be carried out perfectly with a real time.

Please delete the third full paragraph on page 12 of Applicant's specification and substitute therefor the following new paragraph:

The shape of the collection portion of the particle shape substance is made to form a guitar shape and it can have the heat ~~i nsulation~~ insulation effect. Further, according to the provision of a collection box arranged at a lower portion of the collection portion, the particle shape substance can be discharged in a suitable time and the easily construction having the low cost processing a ~~p paratus~~ apparatus can be attained. Before the gathering in the collection box using a screw compression machine the particle shape substance is caught and then the processing efficiency can be heightened. A reference numeral 15a denotes the electric dust ~~collecti on~~ collection portion.

Please delete the third full paragraph on page 15 of Applicant's specification and substitute therefor the following new paragraph:

NO reduces abruptly in company with the voltage arise and vanish completely in 6 kV and continues zero (0) until 7.5 kV and further when the voltage arises the concentration increases gradually. When NO is zero (0) condition, NOx

presents only NO₂ condition and between from 6.5 kV to 7.5 kV, it changes abruptly with V shape between from 130 ppm to zero (0). Accordingly, utilizing this characteristic, it attains the complete processing of the NO and shows the possibility about the decomposition of the particle shape substance without the residual NOx. By suiting the combustion ~~con- ditions~~ conditions of the engine and the boiler the harmful exhaust gas becomes completely to the harmless one in the real time.